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Backgrounds of the Cooperative Program of Forest Planting

as

Carried on Under Clark-McNary Law

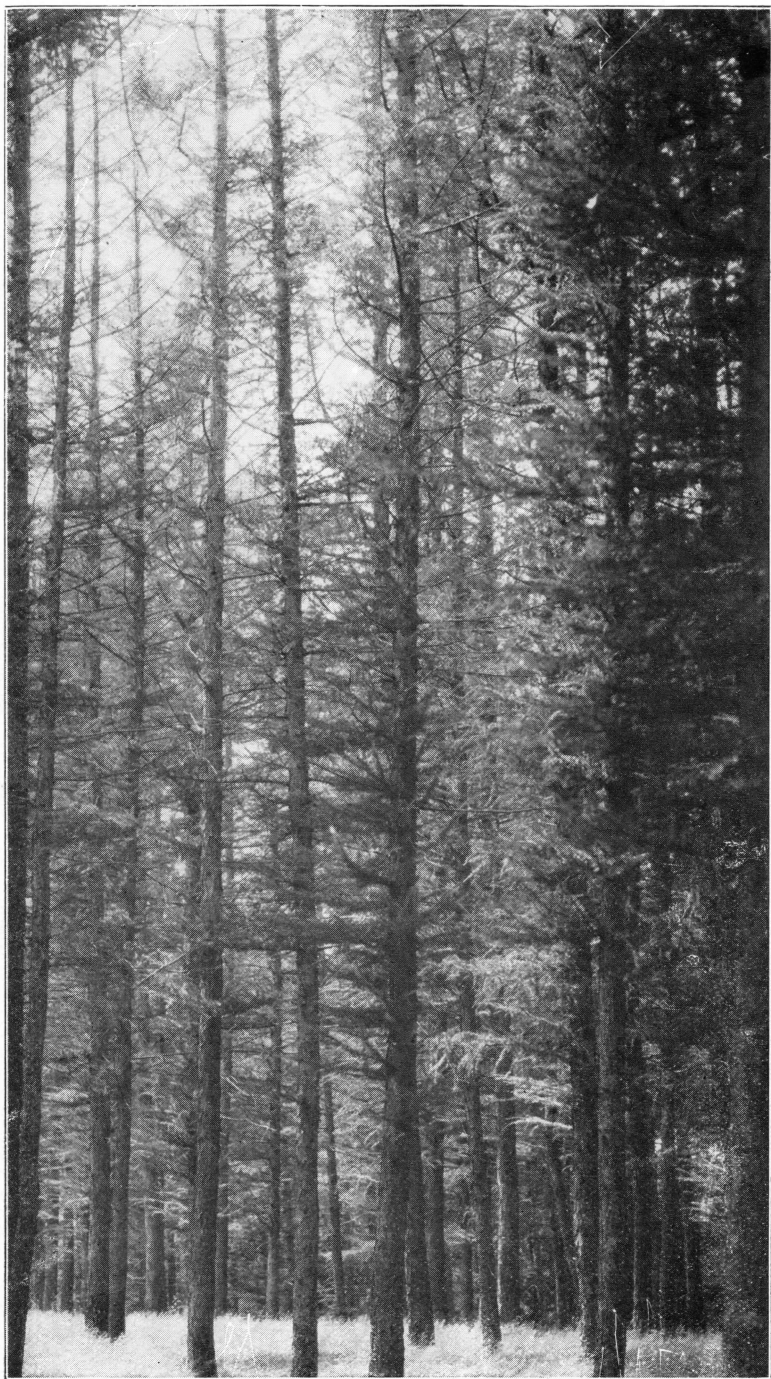
By G. H. Collingwood, Extension Forester, U. S. Department of Agriculture

Many of Iowa's pioneers came from regions where trees were an established part of the landscape. Naturally their first thought was to surround the home with trees and secure protection from them. No doubt this led the Federal Government early in 1873 to pass the Timber Culture Act.

This permitted a homesteader to acquire 160 acres of land if he would grow trees on 40 acres. To expend so much on tree growing during the period of pioneer development was for most settlers physically and financially impossible. Accordingly from year to year the law was made less demanding. Finally it was taken off the statutes. But tree planting continued. Efforts to produce timber gave way to the more immediately recognized problem of protecting homes and crops from severe winds by planting windbreaks and shelterbelts.

The interest maintained by the Department of Agriculture in windbreaks and shelterbelts is shown by numerous papers and publications from the Weather Bureau, the Bureau of Plant Industry, and the Forest Service.

There is fairly general agreement on the part of all investigators that windbreaks benefit crops growing more or less adjacent to them by decreasing evaporation caused by dry winds; by modifying the average temperature; and by breaking the force of severe winds which would break down or injure portions of the crop. These advantages outweigh the objectionable features and extend for a distance of 8 to 10 feet to the leeward for every foot in tree height. A windbreak 30 feet high benefits the crop for 250 to 300 feet away. The influence takes the form of a curve, lowest—even detrimental—near the trees, rapidly reaching a crest about one or two times the height of the trees, and gradually tapering off to a normal yield at a distance usually 8 to 10 times the height of the trees.



Grove of European Larch in Story County, Iowa, 35 years after planting.

Numerous examples support the Forest Service in estimating that windbreaks and shelterbelts pay for themselves in the increased productivity of the protected field without taking into account the value of the wood produced. Other examples can be found to show the value of the windbreak in connection with the feed lot, and the comfort of the farm home.

In 1924 Congress recognized the importance of tree planting about the farm home as well as on idle lands, as a definite part of a national forestry program. The Clarke-McNary Law is the basis for most of the forestry activities in the United States, and includes two sections of particular interest to all farmers.

Section 4 authorizes the Secretary of Agriculture to cooperate with the various states in procuring, producing and distributing forest tree seeds and plants for the purpose of establishing windbreaks, shelterbelts and farm woodlots upon denuded or non-forested lands within the states. The cooperating party within the states is usually the State Forester. Under the terms of this section of the law \$75,000 is being used to cooperate with the state forest officers of 34 states and two territories for growing planting stock, and distributing it to farmers.

Section 5 authorizes similar cooperation to assist the owners of farms in establishing, improving and renewing woodlots, shelterbelts, windbreaks, and other valuable forest growth and in growing and renewing usable timber crops. For carrying out the terms of this section \$60,000 is available. The Extension Services of 32 State Agricultural Colleges have cooperative agreements with the U. S. Department of Agriculture and use portions of this fund for the employment of Extension Foresters.

In Iowa, tree planting for forest and windbreak purposes has been a definite part of the agricultural extension program since September 1921—several years before the passage of the Clarke-McNary Law. Agricultural leaders early recognized that farm homes and farm crops need the protection which trees afford. They also realize that nearly 2½ million acres of Iowa land suited to timber growing presents a problem which deserves careful consideration. More recently attention has been called to the terrific soil losses from erosion, the part which this plays in aggravating flood damage, and the extent to which trees may assist in controlling this situation.

In 1922 the State Department of Agriculture reported that Iowa farmers had planted over 200,000 acres in woodlots and

shelterbelts. Part of this was the result of efforts stimulated by the Timber Culture Act, but most of it came from a real desire on the part of farmers to have trees about their homes and on their farms. None of this planting can be credited to the agricultural extension program because it was done before the inauguration of any organized effort on the part of the Extension Service. Much of it is the result of intelligent far sighted activity on the part of commercial nurserymen. No doubt the Forestry Department at Ames has had considerable influence during the several years that it has been active.

In spite of this there are many farm homes without the protection which trees furnish. Plans are now being developed by the Agriculture Extension Service for a state-wide program of education for tree planting which should have a material influence upon thousands of Iowa farms.

The census of 1925 shows over 213,000 farms in Iowa, over 2,000,000 acres of woodland and over 500,000 acres of land in farms which is neither cultivated, pastured nor wooded. Much of this is a direct burden upon the community. All of it could be made productive if growing timber.

In 1923 two-thirds of the farm homes in Nebraska had windbreaks. This proportion was larger in Eastern Nebraska which would indicate that Iowa may have more farms with windbreaks. But if one-fifth of the farm homes are without windbreaks over 40,000 are needed in this state. In addition there are many windbreaks which should be filled in or replaced. This indicates clearly that we are justified in giving consideration to the planting of windbreaks about farm homes, the rejuvenation of old windbreaks and the planting of waste or idle lands.

One naturally asks "What are other states doing?" The heaviest forest and tree planting programs are being carried on in the East, where large areas of idle land are a recognized burden. New York, Pennsylvania, Massachusetts, Vermont, New Hampshire, Ohio and Connecticut take the lead, but the nearby states of Indiana, Nebraska, Kansas, Colorado, Idaho and Wisconsin are carrying on planting programs of increasing importance.

Those who do not think that comparable conditions exist in Iowa should compare the census figures of 1900 with those of 1925, which reports land in farms has shrunk by 1,283,524 acres. The fertile land of Iowa has been slipping out from under cultivation at the rate of over 50,000 acres a year for the past 25 years. Present methods of agriculture combined with our national economic conditions are creating land prob-

lems which must be faced and for which forest planting is often the logical solution. This is the situation which was faced by Iowa's representatives in Congress when they helped pass the Clarke-McNary Law.

New York State has the same problem to a greater extent and has been a subject of study for several years. In a recent address Dr. C. E. Ladd of Cornell University states that farm land in that state has been abandoned at the rate of 100,000 acres a year for the past 40 years. He believes that poor land will continue to decrease in price and be abandoned, but that in spite of this improved tillage of the better soils will maintain an increasing production of farm stuff for several years to come. Increased forestry activity is his solution for satisfactorily handling this growing burden of idle land.

Reports on forest extension work in Iowa for the five years ending last December, show a steady increase in results accomplished. In 1922 Extension Forester Bode established 22 demonstration forest or windbreak plantings. To do this the farmers secured a total of 17,567 trees. There has been a slow growth since then until in the year ending 1926 a total of about 150 demonstrations had been established and during that year 30,086 trees were distributed to farmers.

Just what does this mean? On the basis of forest planting, where trees are planted about six feet apart or 1000 trees to the acre, it means that no more than 30 acres were established in trees.

The last census shows 46,946 acres of woodland cleared for crops in Iowa in 1924 and 8,462 acres of woodland burned over. This indicates that no material progress has been made toward reclaiming any of the abandoned land or maintaining forest growth in this state. The same figures coupled with the present agricultural conditions would hardly indicate that additional cleared land was necessary to productive agriculture in Iowa.

If a satisfactory windbreak requires 200 trees, these figures mean that scarcely more than 150 windbreaks could have been established. Trees used for replacements would cut this number down.

Without doubt the principal reason why greater progress has not been made is because of the inability to secure reliable planting stock at sufficiently low prices. If local conditions make the maintenance of a state forest nursery impracticable, then satisfactory arrangements should be made with the commercial nurserymen of the state.

The work now being conducted by the Extension Service needs such a source of planting stock in order that its work may be most helpful to the state. The program now being carried on in Story County is a typical example.

In 1924 Extension Forester I. T. Bode and County Agent A. H. Pickford undertook a county-wide program of wind-break planting. They carefully chose their cooperators from among persons who were interested, able to meet the necessary requirements, willing to carry out the plans, and so located that the demonstrations would be seen by a maximum number of people. During that spring 13 demonstrations using 2,056 trees were made in 12 townships. Three of these demonstrations were training schools for the other cooperators. As a matter of fact a number of farmers attended these demonstrations who were not cooperators, but wished to get all the facts before undertaking similar work on their own farms. All the trees for these 13 demonstrations were furnished from the nursery of the Iowa Experiment Station at Ames, but the cooperators paid the packing and shipping costs. A check up at the end of the year showed 95 per cent of the trees to be growing.

During October 1927 Prof. Bode and County Agent H. P. Hansen arranged a farmers' tour to four of these wind-breaks. Twenty-five farmers accompanied them and saw what four years of growth had done. Lunch was served at one of the farm homes where the wives and daughters of many of the men joined the party. This gave an opportunity to review the progress and vision the future of these plantings. Articles about the tour were published in farm papers. Without a doubt a real interest in tree planting was generated although everyone who attended the tour was informed that the state's capacity to furnish trees for similar plantings is limited. Since the tour, plans have been completed for a series of five training schools in Story County to be followed by a campaign for windbreak planting. Trees for these plantings must be purchased from commercial sources.

This is a single example of the work being carried on by the Extension Service. Facilities for expanding it should keep pace with the demand, for land owners will be increasingly confronted with the necessity for trees. The state is interested in the fullest utilization of all its land area, and in the conservation of its soil resources. To accomplish this, rough idle land should be planted to trees, and every effort made to stop erosion. As people become more prosperous they recognize the desirability of trees about their homes. Trees planted for windbreak purposes are a wall of green

whose protection makes possible the establishment of trees for aesthetic and cultural purposes. It is here that forestry touches closely with agriculture, and perhaps encroaches upon the field of horticulture. The Clarke-McNary Law, therefore, makes possible leadership and assistance of widespread influence to farm owners in a state like Iowa.



North Twin Lake, Calhoun County.